

# ADVANCED MANUFACTURING TECHNOLOGY - ASSOCIATE IN SCIENCE

Plan Code: 2921

The Associate in Science in Advanced Manufacturing Technology degree prepares students for transfer to a California State University, and prepares students for careers in aerospace, medical device, automotive aftermarket, and many other advanced manufacturing sectors where machine tool technologies are utilized. Students will learn a variety of valuable skills including print reading, shop math, and CNC machine tool programming. Students will learn inspection techniques using calipers, micrometers, indicators, thread-gaging, and automated measurement equipment, such as digital height-gages, and indicators. Students will create machine programs using the latest software technologies on the latest CNC machine tool equipment and simulators. The program will provide students with the technical skills need to find employment or advancement in the field of advanced manufacturing/machine tool technology. Students will find jobs or apprenticeships as machine operator, CNC operator, machinist, CNC programmer, or inspector.

## Program Student Learning Outcomes

- Demonstrate the ability to attain the Institutional Student Learning Outcomes (ISLOs).
- Demonstrate the ability to create and interpret mechanical engineering drawings and specifications.

## Program Requirements

This degree requires the completion of General Education coursework plus the following:

Code Number	Course Title	Units
<b>REQUIRED COURSES</b>		
ADMT 50	Advanced Manufacturing, Introduction	3
ADMT 200	Advanced Manufacturing Math	3
ADMT 251	Advanced Manufacturing, CNC Mills/Lathes	2
ADMT 252	Advanced Manufacturing, Sheet Metal CNC	2
ADMT 253	Advanced Manufacturing, Capstone	2
CAD 50	Mechanical Drafting, Introduction	2
CAD 51	Mechanical Drafting, Intermediate	2
CAD 52	CAD/CAM	2
CAD 60	Geometric Dimensioning and Tolerancing	3
ETEC 10	Introduction to Engineering Technology	1
ETEC 60	Material Science for Engineering Tech	3
OSHA 254	OSHA Standards for General Industry	2
WELD 50	Introduction to Welding	4
<b>Required Subtotal</b>		<b>31</b>
Complete one of the following: <sup>1</sup>		19-39

LBCC General Education (Plan A) (<https://lbcc-public.courseleaf.com/academic-requirements/general-education-transfer-degree-certificate-requirements/general-education-plans/plan-a/>)

CSU GE Breadth (Plan B) (<https://lbcc-public.courseleaf.com/academic-requirements/general-education-transfer-degree-certificate-requirements/general-education-plans/plan-b/>)

IGETC Pattern (Plan C) (<https://lbcc-public.courseleaf.com/academic-requirements/general-education-transfer-degree-certificate-requirements/general-education-plans/plan-c/>)

Electives (as needed to reach 60 degree-applicable units) <sup>2</sup>

**Minimum Degree Total** **60**

<sup>1</sup> Units for the major may be double-counted for LBCC GE, CSU GE, or IGETC; see counselor for limitations.

<sup>2</sup> Elective units from course(s) numbered 1-599, if needed, to reach 60 degree-applicable units.

# ADVANCED MANUFACTURING TECHNOLOGY - CERTIFICATE OF ACHIEVEMENT

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Plan Code: 3921

The Certificate of Achievement in Advanced Manufacturing Technology program prepares students for careers in aerospace, medical device, automotive aftermarket, and many other advanced manufacturing sectors where machine tool technologies are utilized. Students will learn a variety of valuable skills including print reading, shop math, and CNC machine tool programming. Students will learn inspection techniques using calipers, micrometers, indicators, thread-gaging, and automated measurement equipment, such as digital height-gages, and indicators. Students will create machine programs using the latest software technologies on the latest CNC machine tool equipment and simulators. The program is designed to be complete in 2 semesters and will provide students with the technical skills needed to find employment or advancement in the field of advanced manufacturing/machine tool technology.

## Program Student Learning Outcomes

- Demonstrate the ability to create and interpret mechanical engineering drawings and specifications.

## Program Requirements

Code Number	Course Title	Units
<b>REQUIRED COURSES</b>		
ADMT 50	Advanced Manufacturing, Introduction	3
ADMT 200	Advanced Manufacturing Math	3
ADMT 251	Advanced Manufacturing, CNC Mills/Lathes	2
ADMT 252	Advanced Manufacturing, Sheet Metal CNC	2
ADMT 253	Advanced Manufacturing, Capstone	2
CAD 50	Mechanical Drafting, Introduction	2
CAD 51	Mechanical Drafting, Intermediate	2
CAD 52	CAD/CAM	2
CAD 60	Geometric Dimensioning and Tolerancing	3
ETEC 10	Introduction to Engineering Technology	1
ETEC 60	Material Science for Engineering Tech	3
OSHA 254	OSHA Standards for General Industry	2
WELD 50	Introduction to Welding	4
<b>Total Units</b>		<b>31</b>

# ADVANCED MANUFACTURING AND DESIGN TECHNOLOGY - CERTIFICATE OF ACHIEVEMENT

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Plan Code: 3923

The Advanced Manufacturing Technology department will be offering several Certificates of Achievement to provide students the knowledge and training they need to enter a specialized career or enhance their skills for advancement in their job. Coursework completed while earning a Certificate can also be applied to the Associate Degree. The Advanced Manufacturing and Design Technology certificate provides a student the necessary skills for an entry-level/internship opportunity in the advanced manufacturing field with a focus on Computer Aided Design, and Computer Aided Manufacturing.

## Program Student Learning Outcomes

- Demonstrate the ability to create and interpret mechanical engineering drawings and specifications.

## Program Requirements

Code Number	Course Title	Units
<b>REQUIRED COURSES</b>		
CAD 50	Mechanical Drafting, Introduction	2
CAD 51	Mechanical Drafting, Intermediate	2
CAD 52	CAD/CAM	2
CAD 60	Geometric Dimensioning and Tolerancing	3
CAD 202	AutoCAD Fundamentals	2
CAD 220	Introduction to CATIA	2
ETEC 60	Material Science for Engineering Tech	3
<b>Total Units</b>		<b>16</b>

# ADVANCED MANUFACTURING TECHNOLOGY CORE SKILLS - CERTIFICATE OF ACHIEVEMENT

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Plan Code: 3922

The Advanced Manufacturing Technology department will be offering several Certificates of Achievement to provide students the knowledge and training they need to enter a specialized career or enhance their skills for advancement in their job. Coursework completed while earning a Certificate can also be applied to the Associate Degree. The Advanced Manufacturing Technology Core Skills Certificate provides a student the necessary skills for an entry-level/internship opportunity in the advanced manufacturing field with a focus on manufacturing.

## Program Student Learning Outcomes

- Demonstrate the ability to create and interpret mechanical engineering drawings and specifications.
- Create Computer Numerical Control (CNC) machine tool programs utilizing CNC programming technologies.

## Program Requirements

Code Number	Course Title	Units
<b>REQUIRED COURSES</b>		
ADMT 50	Advanced Manufacturing, Introduction	3
ADMT 200	Advanced Manufacturing Math	3
CAD 50	Mechanical Drafting, Introduction	2
ETEC 60	Material Science for Engineering Tech	3
OSHA 254	OSHA Standards for General Industry	2
WELD 50	Introduction to Welding	4
<b>Total Units</b>		<b>17</b>